AMENDMENTS TO THE SPECIFICATION

The Specification is amended at the following passages:

Page 5, 1st paragraph, lines 1-8:

(see Figure 1). The first region of the intermediary nucleic acid molecule is designed to be complementary to and also hybridize to an anti-tag molecule, and is referred to herein as the "tag" sequence. Preferably, each first region of each intermediary molecule (tag) that has a different sequence hybridizes to a different anti-tag molecule. Methods of designing tag/anti-tag sequences to provide a method of sorting nucleic acids are known in the art (see for example Ben-Dor et al (*J. of Comp. Biol.* 7(3-4):503-519, 2000 and references cited therein ~~which are all incorporated herein by reference in their entireties~~.)

Page 10, 1st paragraph, lines 1-7:

Polynucleotides include analogs of naturally occurring polynucleotides in which one or more nucleotides are modified over naturally occurring nucleotides. Polynucleotides then, include compounds produced synthetically (for example, peptide nucleic acids "PNA" as described in U. S. Patent No. 5,948,902 and the references cited therein~~, all of which are incorporated herein by reference in their entireties~~) which can hybridize in a sequence specific manner analogous to that of two naturally occurring polynucleotides.

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Page 15, 2nd paragraph, lines 5-10:

Immobilization of oligonucleotides on a substrate or surface may be accomplished by well-known techniques, commonly available in the literature. See, for example, A. C. Pease, et al., *Proc. Nat Acad. Sci. USA,* 91:5022-5026 (1994); Z. Guo, R. A. Guilfoyle, A. J. Thiel, R. Wang, L. M. Smith, *Nucleic Acids Res* 22, 5456-65 (1994); and M. Schena, D. Shalon, R. W. Davis, P. O. Brown, *Science,* 270,467-70(1995)~~, each incorporated herein by reference in their entireties~~.

Page 17, 1st paragraph, lines 1-13:

on the oligonucleotide probes and relates to the presence of probes in a medium. The signal producing system includes all of the reagents required to produce a measurable signal. Other components of the signal producing system may be included in the developer solution and can include substrates, enhancers, activators, chemiluminescent compounds, cofactors, inhibitors, scavengers, metal ions, specific binding substances required for binding of signal generating substances, and the like. Other components of the signal producing system may be coenzymes, substances that react with enzymic products, other enzymes and catalysts, and the like. The signal producing system provides a signal detectable by external means, by use of electromagnetic radiation, desirably by optical examination. Signal-producing systems that may be employed in the present invention are those described more fully in U.S. Patent No. 5,508,178~~, the relevant disclosure of which is incorporated herein by reference in its entirety~~.

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Page 23, 1st paragraph, lines 1-5:

and anti-tag oligonucleotides that reduces multiple tag-to-anti-tag combinations is taught by Ben-Dor et al (*J. of Comp. Biol.* 7(3-4):503-519, 2000~~, the teachings of which are incorporated herein by reference in their entireties~~.) However, Ben-Dor et al. (supra) does not address the problem of cross hybridization between anti-target sequences of intermediary molecules and anti-tag sequences on the array.

Page 30, 3rd (last) paragraph, lines 18-23:

Gamper and coworkers (Kutyavin et al. *Biochemistry,* 35; 11170 (1996) ~~incorporated herein by reference in its entirety~~) determined experimentally that short oligonucleotide duplexes containing D/T base pairs that replace A/T base pairs have melting temperatures (Tm) as much as 10° C higher than duplexes of identical sequence composed of the four natural nucleotides. This is due mainly to the extra hydrogen bond provide by the 2-amino group. However, the duplexes designed to

Page 32, 2nd paragraph, lines 7-14:

Woo and co-workers (Woo et al., *Nucleic Acids Research,* 24; 2470 (1996) ~~incorporated herein by reference in its entirety~~) showed that introducing either P or I into 28-mer duplexes to form P/G and I/C base-pairs decreased the Tm of the duplex by -0.5 and -1.9° C respectively per modified base-pair. These values reflect the slight destabilization attributable to the G/P pair and a larger destabilization due to the I/C pair. However, introducing P and I into the duplexes such that opposing I/P base-pairs are formed reduced the Tm by -3.3° C per modified base-pair. Therefore the I/P base pairs are more destabilizing.

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Page 34, 1st paragraph, lines 1-5:

University Press, Oxford, pp. 1-24 (1991), ~~and pages 1-24 of which are incorporated herein by this reference~~. Indirect synthesis may be performed in accordance biosynthetic techniques (e.g. polymerase chain reaction "PCR"), as described in Sambrook, J. et aL, "Molecular Cloning, A Laboratory Manual", 2nd edition 1989, ~~the passages relating to PCR of which are~~ incorporated herein by this reference.

Page 40, 3rd paragraph, lines 15-17:

~~It is understood that all references cited herein are incorporated into the present application by reference as if each individual reference was incorporated herein by reference.~~

Page 43, 1st paragraph, lines 1-10:

performed in 0.65ml pre-siliconized microfuge tubes containing the following components; 20 mM Tris-Cl (pH 8.8 @ 25° C), 10 mM KC1, 10 mM $(NH4)_2SO_4$, 2 mM $MgSO_4$, 0.1 TRITON® -X100 ~~surfactant~~ polyethylene glycol tert-octylphenyl ether (also referred to as t-octylphenoxypolyethoxyethanol), 500 nM 6-mer primer, 20 nM 30-mer DNA template, 0.8 units/microL (~70 nM) Bst DNA polymerase and 20 microM dNTP. The reaction mixtures were incubated at 45° C for 4 hours and quenched with EDTA. 5 microL of the reaction mixture was mixed with 15 microL of distilled H_2O and 20 microL of matrix solution (0.2 M 2,6-dihydroxyacetophenone, 0.2 M diammonium hydrogen citrate). One microliter samples were spotted and dried on a MALDI sample grid plate analyzed by Matrix Assisted Laser Desorption Ionization Time-of-Flight (MALDI-TOF) mass spectrometry.

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Page 44, 1st paragraph, lines 4-20:

Unstructured single stranded UNA was generated by incorporating 2-aminoadenosine and 2-thiothymidine nucleotides using a 14-mer primer and 56-mer template (5'-phosphorylated) and Bst DNA Polymerase followed by digestion of the DNA template with Lambda Exonuclease (Figure 8). Ten microliter extension reactions were performed in 0.65ml pre-siliconized microfuge tubes containing the following components; 20 mM Tris-Cl (pH 8.8 @ 25° C). 10 mM KC1,10 mM $(NH4)_2SO_4$, 2 mM $MgSO_4$, 0.1% TRITON® -X100 ~~surfactant~~ polyethylene glycol tert-octylphenyl ether (also referred to as t-octylphenoxypolyethoxyethanol), 1.0 microM primer/template, 500 microM dGTP, 500 microM dATP (or dDTP), 500 microM dTTP (or 2-thioTTP), 200 microM ^{32}P- -CTP and 0.8 units/microL Bst DNA polymerase. The reactions were incubated at 65° C for 30 minutes, quenched with 5 mM EDTA, ethanol precipitated, dried and resuspended in 10 microL of 10 mM Tris-Cl pH 8.0. The 56-mer template was digested by incubating the resuspended samples with 10 units of lambda exonuclease (Strandase Kit™, (Novagen; Madison, WI)) for 30 minutes at 37° C. The reactions were quenched with 5 mM EDTA, ethanol precipitated, dried and resuspended in 10 microL of 10 mM Tris-Cl pH 8.0. The samples were then electrophoresed on 10% denaturing (7M urea) polyacrylamide gels and visualized using phosphorimaging methods.

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